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EXAMINER	
VORTMAN, ANATOLY	

ART UNIT	PAPER NUMBER
2835	

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/976,912	O'CONNOR ET AL.	
	Examiner	Art Unit	
	Anatoly Vortman	2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 December 2005 (Appeal Brief)*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32,35-42,45-48 and 52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32,35-42,45-48 and 52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Reissue Application

Appeal Brief

1. In view of the arguments presented in the Appeal Brief filed on 12/02/05, PROSECUTION IS HEREBY REOPENED. The finality of the previous final Office action is hereby withdrawn and new final Office action set forth below. The finality is appropriate, because all independent claims of record 1, 9, 16, 19, 20, 28, 35, 36, 37, 45, and 52 have been amended by Amendment filed on 06/20/05. To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution.

Amendment

2. All independent claims of record 1, 9, 16, 19, 20, 28, 35, 36, 37, 45, and 52 have been amended by amendment filed on 06/20/05. Claims 33, 34, 43, 44, and 49-51 have been previously cancelled. Thus, claims 1-32, 35-42, 45-48, and 52 are pending in the instant application.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-32, 35-42, 45-48, and 52 (i.e. all pending claims), are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter added by the amendment, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

All independent claims of record have been amended to recite that the heat pipe being attached to the structure via a "clamp".

The specification of the underlying US/5,966,286 for which reissue is sought, despite mentioning that the heat pipe may be mounted via a clamp, nonetheless is lacking adequate teaching regarding the structure of the clamp and how said heat pipe is mounted via said clamp.

The Fig. 1A, 1B, and 2, despite depicting the clamp (24), do not show however the structure of the clamp and how it holds the heat pipe.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1-7,9-14,16-26,28-32,35-42,45-48 and 52, are rejected under 35 U.S.C. 102(e) as being anticipated by US/5,583,316 to Kitahara et al., (Kitahara).

Regarding claim 1, 2, and 7, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)) an apparatus removing heat from a heat generating component (integrated circuit) (1), said apparatus comprising: a heat pipe (55) comprising an evaporator portion and a condenser

portion, said heat generating component (1) being thermally coupled to said evaporator portion; an air duct comprising a housing (formed by members (2) and (3)) having internal fins (4) (column 23, lines 41-43) and a clamp (56), said air duct directing an air flow from an inlet port located near the center of said air duct (opening of the fan (3)) to first and second exit ports located at opposite end portions of said air duct (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port, since cooling air will be exiting between said fins), said condenser portion of said heat pipe (55) being attached to said housing via said clamp (56), and an air flow generator (3) (a fan) coupled to said inlet port for producing said air flow.

Regarding claim 9, 10, and 14, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)) an apparatus cooling an integrated circuit package assembly (1) located within a portable computer chassis (column 1, lines 15+), said apparatus comprising: a heat exchanger comprising: an air duct having a thin cross-section relative to the width of said duct, said air duct comprising a housing (formed by members (2) and (3)) having first and second major internal surfaces (inner surfaces of members (2) and (3)), an array of fins (4) disposed between said first and second surfaces (column 23, lines 41-43) and protruding from said second surface (Fig. 45), and a clamp (56), said housing further comprising an inlet port disposed at or near a center portion of said air duct (opening of the fan (3)) and first and second exit ports disposed at respective opposite first and second end portions of said duct (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port, since cooling air will be exiting between said fins); and an air flow generator (3) (a fan) coupled to said inlet port for producing a first and a second air flow (inherently), said first air flow being directed from said

inlet port to said first exit port, said second air flow being directed from said inlet port to said second exit port (inherently); a heat pipe (55) having an evaporator portion and a condenser portion, said integrated circuit package (1) being thermally coupled to said evaporator portion; said condenser portion being coupled to said housing of said air duct via the clamp (56).

Regarding claim 16, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)) a portable computer (column 1, line 15+) comprising: an enclosure having an air duct comprising a housing (formed by members (2) and (3)) having internal fins (4) (column 23, lines 41-43), and a clamp (56), said air duct directing an air flow from an inlet port located near the center of said air duct (opening of the fan (3)) to first and second exit ports located adjacent opposite end portions of said air duct (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port, since cooling air will be exiting between said fins), said air duct having a substantially equal width as said enclosure, said enclosure comprising first, second and third sides (inherently); an air flow generator (3) coupled to said inlet port for producing said air flow; and heat transfer means (55) thermally coupling a heat generating component (1) located within said enclosure to said air duct housing, said heat transfer means (55) being coupled to said housing of said air duct via the clamp (56).

Regarding claims 17 and 18, Kitahara disclosed (Fig. 50 (A) (B)) that said exit ports are positioned on at least three sides of the enclosure (any openings between fins (4), would constitute the exit port, since the cooling air would be exiting between said fins (4)).

Regarding claims 20, 21, and 26, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)) an apparatus comprising: a heat pipe (55) comprising an evaporator portion and a condenser portion, said heat pipe (55) coupled to a heat generating component (integrated circuit) (1) at the

evaporator portion of the heat pipe (55); an air duct comprising a housing (formed by members (2) and (3)), said air duct directing an air flow from an inlet port, located at or near a middle of the air duct (an opening of the fan (3)), to a first and second exit ports located at opposite ends of the air duct (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port), said air duct coupled to the condenser portion of said heat pipe (55) via a clamp (56) mounted on the housing; and an air flow generator (3) (a fan) coupled to said inlet port to produce the air flow.

Regarding claim 28, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)), a heat exchanger comprising: an air duct having a housing (formed by members (2) and (3)) including an inlet port located at or near a middle of the air duct (opening of the fan (3)), a clamp (56) and a first and second opposing exit ports (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port, since cooling air will be exiting between said fins); an air flow generator (3) (a fan) coupled to the inlet port to produce an air flow, the air flow being directed from the inlet port to the exit port; a heat pipe (55) having an evaporator portion and a condenser portion, the evaporator portion coupled to an integrated circuit package (1), and the condenser portion being coupled to the air duct via the clamp (56).

Regarding claim 35, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)) a system comprising: an air duct housing (formed by members (2) and (3)) having an inlet port located at or near a middle of the air duct (opening of the fan (3)), a clamp (56) and a first and second exit port located at opposite ends of the air duct (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port, since cooling air will be exiting between said fins); an air flow generator (3) (a fan) coupled to the inlet port to produce an

air flow; and heat pipe (55) coupling a heat generating component (1) to the air duct housing via the clamp (56).

Regarding claim 37 and 38, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)) an apparatus comprising: a heat pipe (55) to be coupled to a heat generating component (integrated circuit) (1); an air duct comprising a housing (formed by members (2) and (3)) having internal fins (4) (column 23, lines 41-43), said air duct directing an air flow from an inlet port positioned at a central point of the air duct (opening of the fan (3)), to first and second exit ports located at opposite end portions of said air duct (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port, since cooling air will be exiting between said fins), the housing coupled to the heat pipe via a clamp (56); and an air flow generator (3) (a fan) coupled to the inlet port to produce air flow.

Regarding claim 45, Kitahara disclosed (Fig. 45, 49, 50(A), 50(B)) a heat exchanger comprising: an air duct (formed by members (2) and (3)) having an inlet port situated at a central point of the air duct (opening of the fan (3)), first and second exit ports disposed at respective opposite first and second end portions of said duct (any openings between fins (4), including ones located at opposite end portions of the air duct, would constitute the exit port, since cooling air will be exiting between said fins), and a clamp (56); and an air flow generator (3) (a fan) coupled to said inlet port to produce a first and a second air flow, said first air flow being directed from said inlet port to said first exit port, said second air flow being directed from said inlet port to said second exit port (inherently); a heat pipe (55) coupled to the housing of the air duct via the clamp (56).

Regarding method claims 19, 36, and 52, the method steps recited in the claims are inherently necessitated by the device structure as taught by Kitahara.

Regarding claims 3, 22, 29, 46, and 39, Kitahara disclosed (Fig. 45) that the housing includes a first plate (2) and a second plate (top surface of member (3)) having respective first and second internal surfaces (inherently), the first internal surface having a first array of protruding members (4) that constitute internal fins.

Regarding claims 4, 11, 23, 30, and, 40, Kitahara disclosed (Fig. 47 (A), 47 (B), and 48), that the first and second plates (65, 66) may have protruding fins (protuberances) on the respective internal surfaces.

Regarding claims 5, 6, 12, 13, 24, 25, 31, 32, 41, 42, 47, and 48, Kitahara disclosed that the housing comprising a material with high thermal conductivity (aluminum) (column 2, line 28).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 8, 15, and 27, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitahara in view of US/4,923,000 to Nelson.

Kitahara disclosed all, but the resonate cantilever vibrator.

Nelson disclosed (Fig. 1) a resonate cantilever vibrator employed as a cooling fluid flow generator for a cooling fluid.

Since inventions of Kitahara and of Nelson are from the same field of endeavor (cooling), the purpose of the cantilever vibrator disclosed by Nelson would be recognized in the invention of Kitahara.

It would have been obvious to a person of ordinary skill in the cooling art at the time the invention was made to substitute conventional cooling fan of Kitahara with cantilever vibrator of Nelson in order to simplify the device and to enhance the heat transfer characteristics (see Nelson, column 1, lines 1+).

Response to Arguments

9. Applicant's arguments regarding 35 USC 112, first paragraph, rejection, have been fully considered but they are not persuasive. The Applicant contends, that col. 3, lines 9-24 of US/5,966,286 adequately teach the clamp. However, said portion of the specification only briefly mentions that "an integral clamp structure 24 is provided for attaching a heat pipe". No detailed teaching of the clamp structure is provided. Also, the Examiner disagrees with Applicant's position that Fig. 1A and 5 adequately teach the clamp. Contrary to the Applicant's position, the Fig. 1A, 1B, and 5, despite schematically depicting the clamp (24), however, do not show the structure of the clamp and how it holds the heat pipe. Fig. 5 only shows schematically (by dotted lines), that the heat pipe is routed through the structure. Fig. 1A and 1B only show the partial opening in the structure (evidently for accepting the heat pipe). Thus, the teaching of the clamp is

not sufficient to adequately enable one of ordinary skill in the relevant art to make and use the invention as claimed without undue experimentation. If Applicant believes that said clamp is an important feature of the invention (as evidenced by the recitation of the "clamp" in all pending independent claims), than the adequate teaching of said "clamp" should have been provided in the specification in order to satisfy the requirements of 35 USC 112, first paragraph.

Further, regarding the art rejection of claims 8, 15, and 27, the Applicant contends that combination of Kitahara and Nelson is improper, because "[I]t would be impermissible hindsight based on Appellant's own disclosure to incorporate the heat-generating element cooling device in *Kitahara* and the heat exchanger having piezoelectric fan means in *Nelson*".

The Examiner respectfully disagrees. It must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. *In re McLaughlin*, 443 F.2d 1392; 170 USPQ 209 (CCPA 1971). Further, the motivation to combine the references had been explicitly presented in the rejection (see p. 6, first two lines of the final Office action mailed on 07/14/05). Also, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. *In re McLaughlin*, 170 USPQ 209 (CCPA 1971). References are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. *In re Bozek*, 163 USPQ 545 (CCPA) 1969.

The remaining Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment (filed on 06/20/05) necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anatoly Vortman whose telephone number is 571-272-2047. The examiner can normally be reached on Monday-Friday, between 10:00 am and 6:30 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Lynn Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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